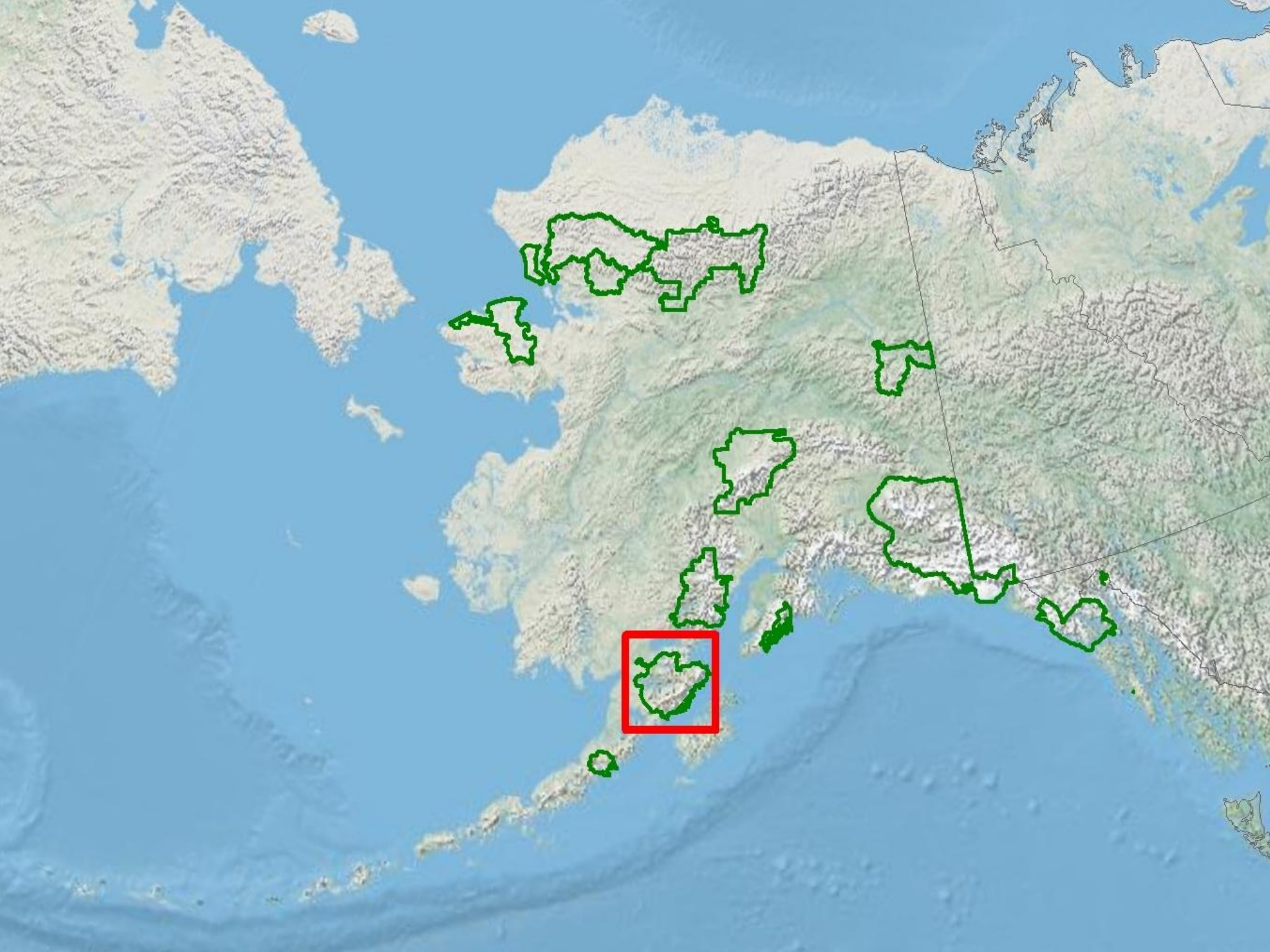


National Park Service
U.S. Department of the Interior
Katmai National Park and Preserve



Bear use at a coastal foraging site in Katmai National Park: Understanding bear use through time- lapse photography

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King Salmon

Geographic Harbor





Project need



Methods





Untitled - ArcMap - ArcMap

ThemeManager AlaskaPak 100%

File Edit View Bookmarks Insert Selection Tools Window Help

Layer: Photo Objects 1:918 Editor Task: Create New Feature Target:

Georeferencing Layer: Drawing Arial 10 B I U A

Layers

- G:\GeographicCameraProject\20110106Backup\2007DigitizePhoto.mdb
 - Photo Objects

Attributes of Photo Objects

PhotoObject	PhotoID *	Xcoord	Ycoord
Bear	2007_GeoCam05713	132.106799999252	105.153200000525
Plane	2007_GeoCam05714	170.095300000161	106.462899999693
Person	2007_GeoCam05714	86.1472999993712	104.498400000855
Person	2007_GeoCam05714	85.6710000000894	104.498400000855
Person	2007_GeoCam05714	84.6589999999851	104.379300000146
Person	2007_GeoCam05714	86.6831000000238	104.498400000855
Person	2007_GeoCam05714	83.766000000076	104.260199999437
Person	2007_GeoCam05714	86.9211999997497	104.438799999654
Right Tide	2007_GeoCam05714	192.240900000557	103.42679999955
Person	2007_GeoCam05714	85.254300000146	104.438799999654
Person	2007_GeoCam05714	85.0756999999285	104.438799999654
Person	2007_GeoCam05714	84.4803999997675	104.379300000146
Person	2007_GeoCam05714	84.2423000000417	104.260199999437
Bear	2007_GeoCam05714	99.245699999854	109.618100000545
Bear	2007_GeoCam05714	138.060100000352	104.915100000799
Bear	2007_GeoCam05714	70.0715999994427	102.474300000817
Bear	2007_GeoCam05714	99.7218999993056	109.737099999562
Bear	2007_GeoCam05714	109.425499999896	108.784600000829
Bear	2007_GeoCam05714	107.341900000349	107.951199999079
Bear	2007_GeoCam05714	102.698499999994	109.737099999562
Bear	2007_GeoCam05714	79.0607999991626	110.332399999723
Bear	2007_GeoCam05714	81.3826000001282	102.355200000107
Bear	2007_GeoCam05714	68.8213999997824	109.498999999836
Bear	2007_GeoCam05714	87.2166000008583	111.225400000811
Bear	2007_GeoCam05714	40.721400000155	100.628799999133
Bear	2007_GeoCam05714	122.998700000346	104.736500000581
Bear	2007_GeoCam05714	38.8164000008255	99.7358999997377
Person	2007_GeoCam05714	84.9550000004083	104.438799999654

Record: 0 Show: All Selected Records

Attributes of tblMainPhotoInfo

FileName *	DateTime	Date	Time
2007_GeoCam05713	8/22/2007 10:21:05 AM	8/22/2007	10:21:05 AM
2007_GeoCam05714	8/22/2007 10:31:05 AM	8/22/2007	10:31:05 AM

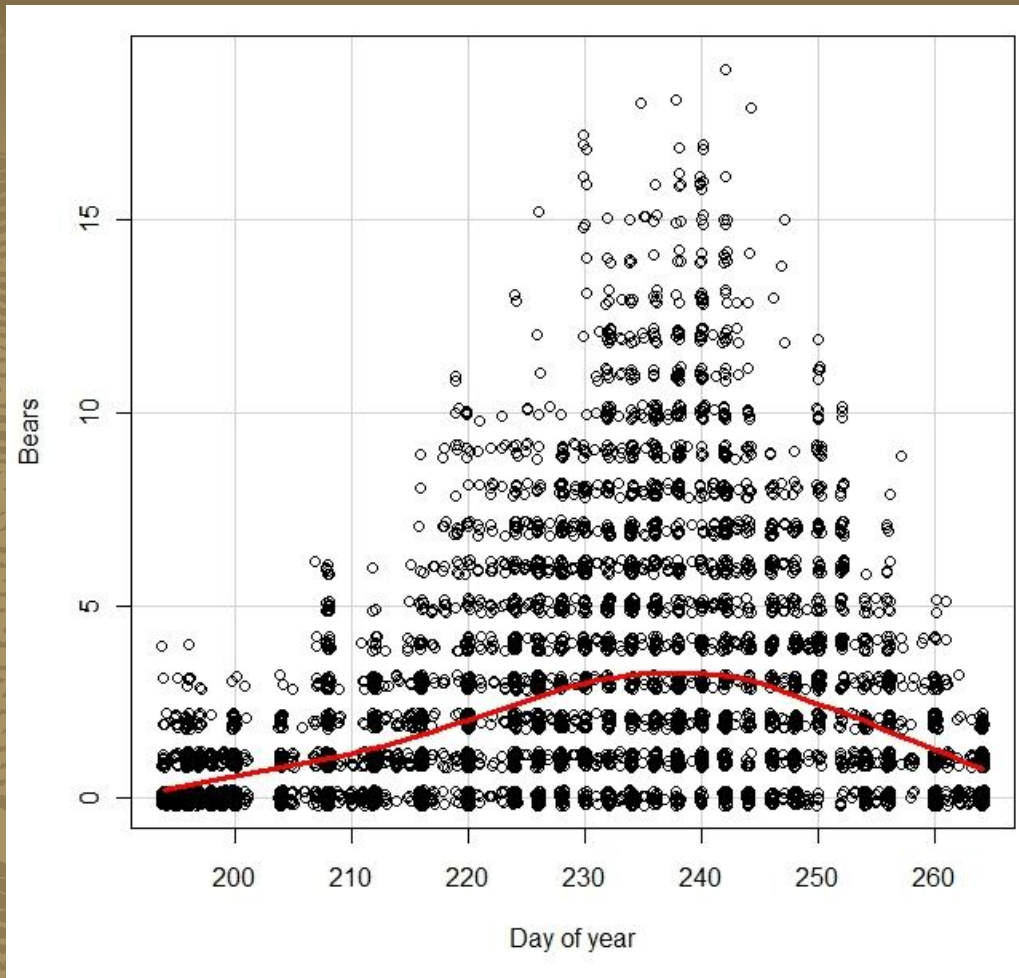
Record: 0 Show: All Selected Records



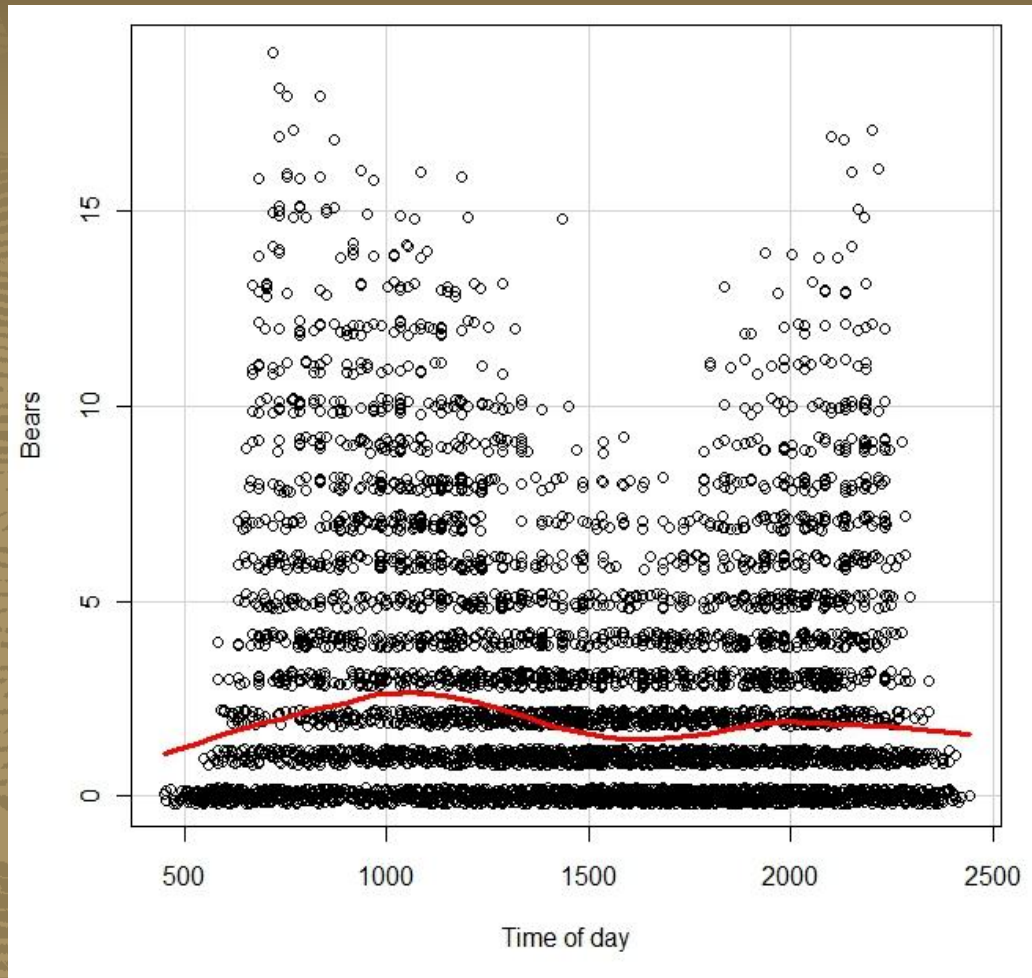
Results: bear use



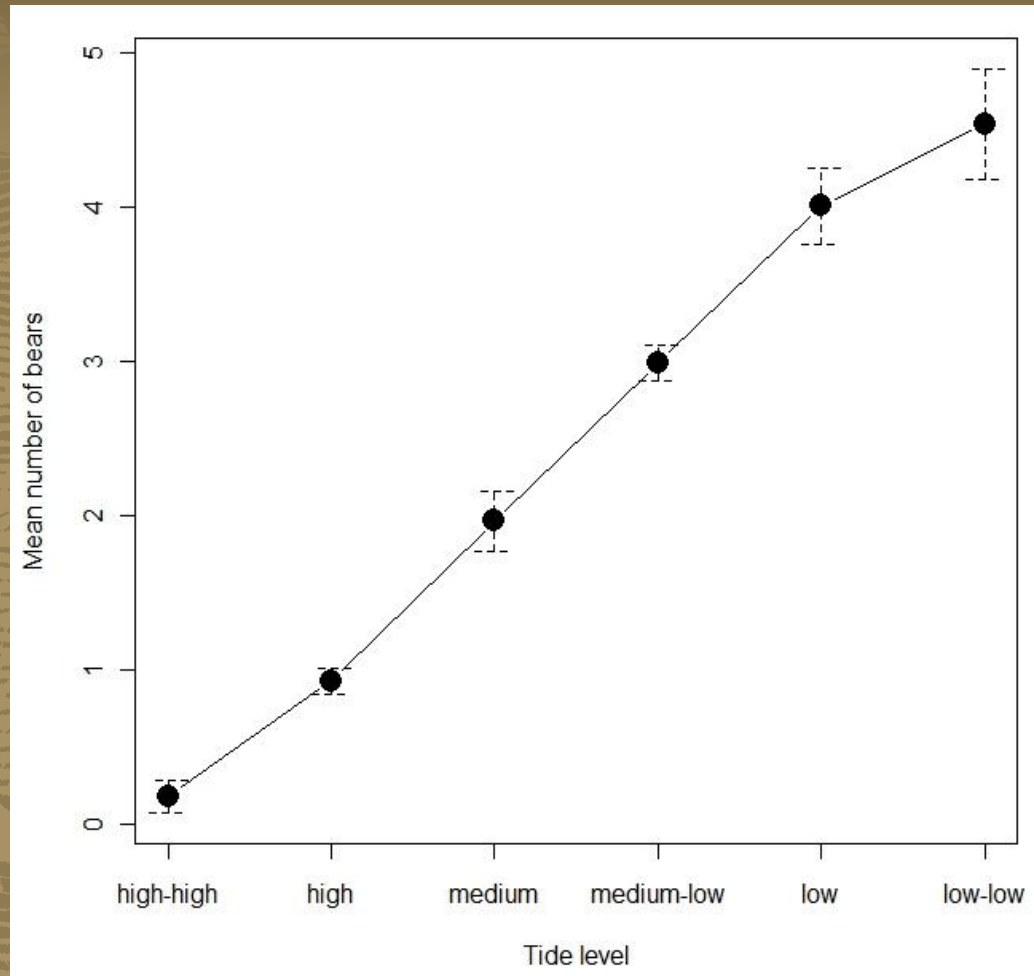
- Primary bear use peaks in mid-late August



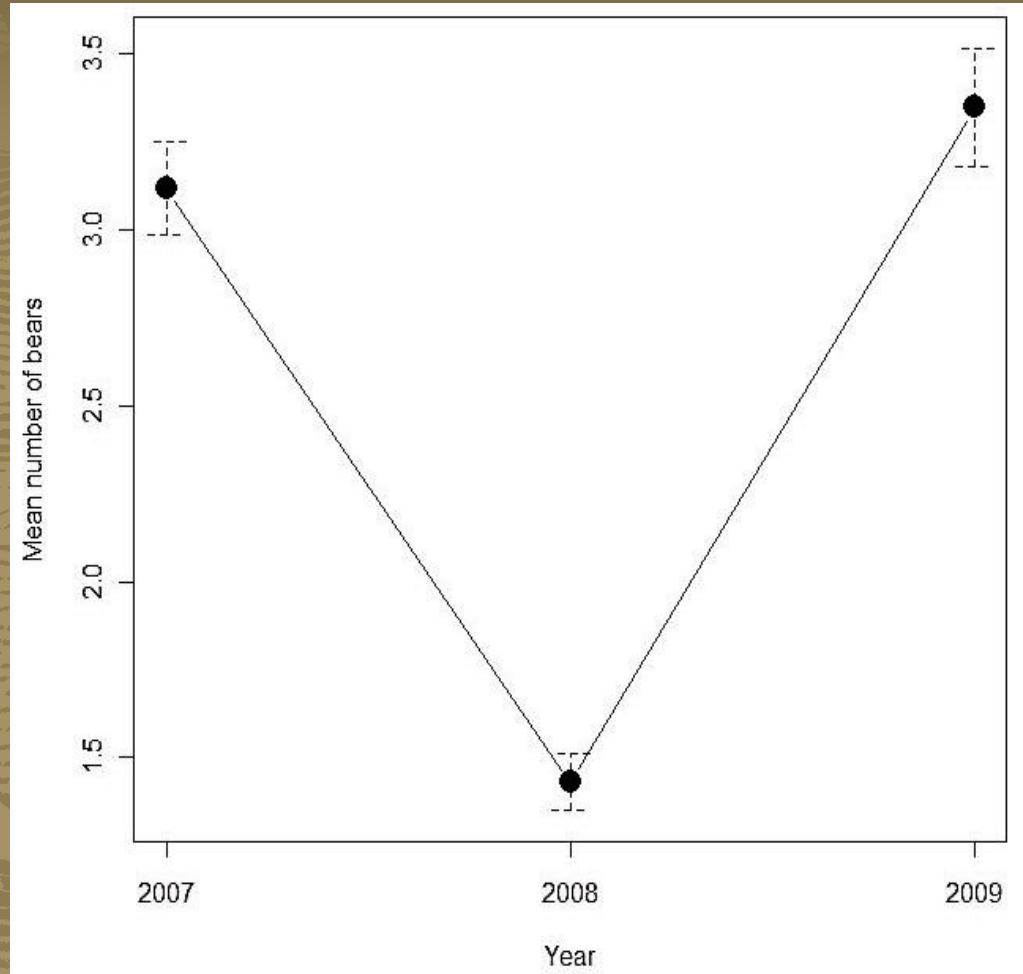
- Two peaks in daily bear use



- Higher bear use at low tides



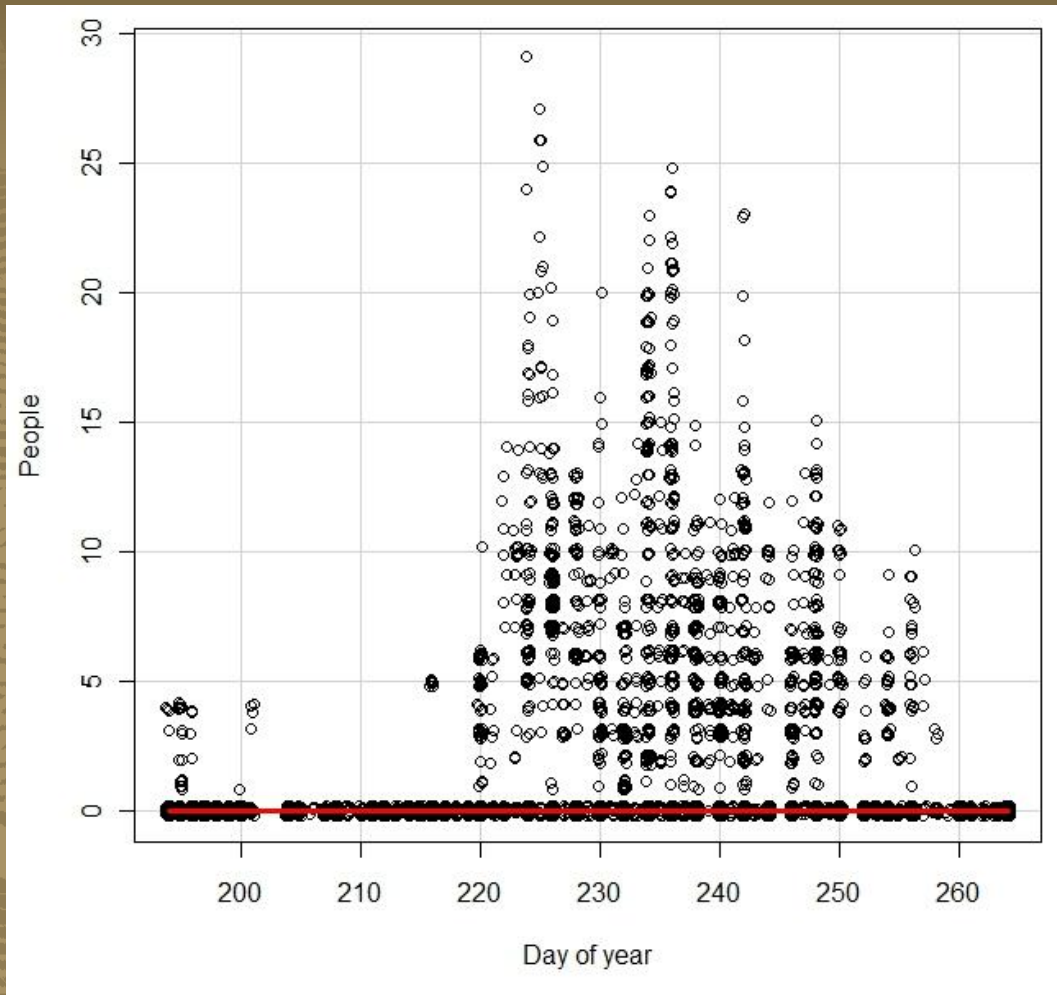
- Differences between years



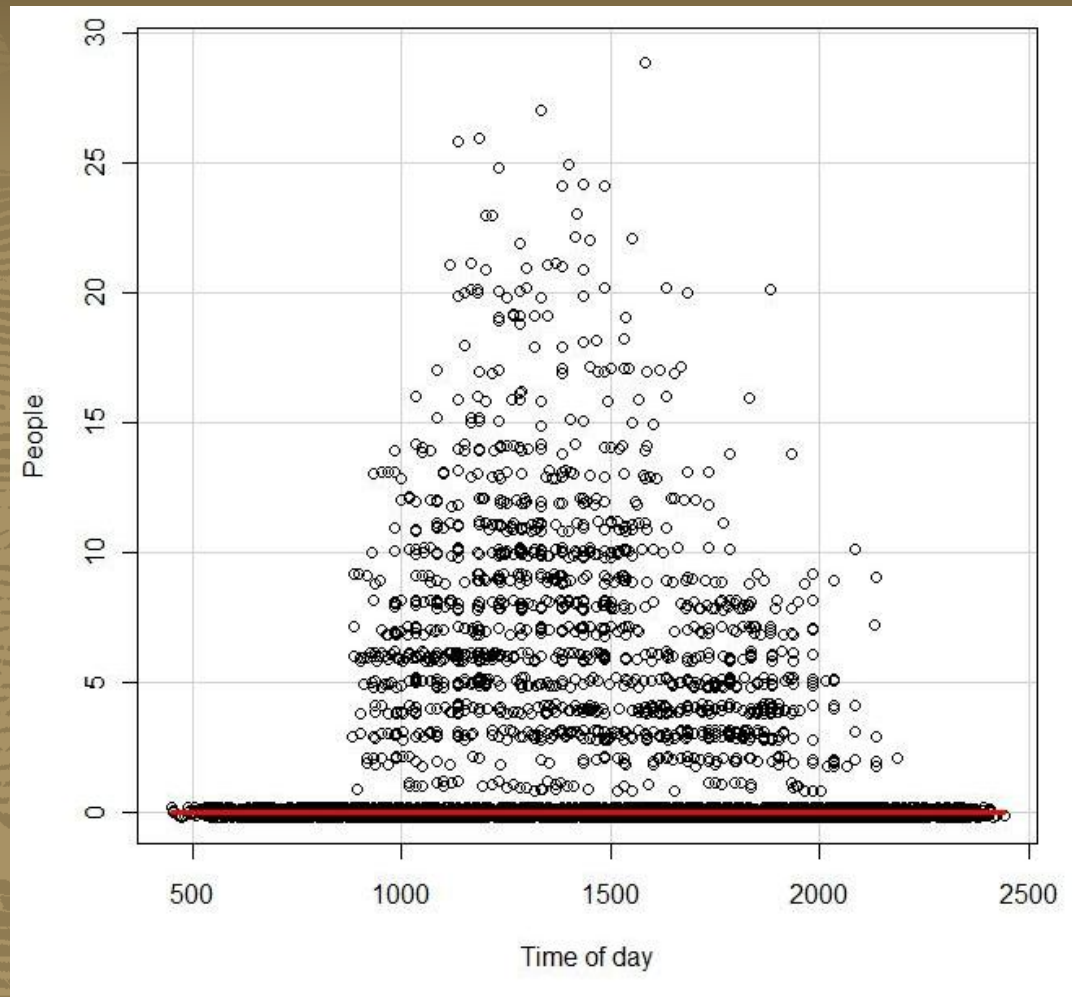
Results: human use



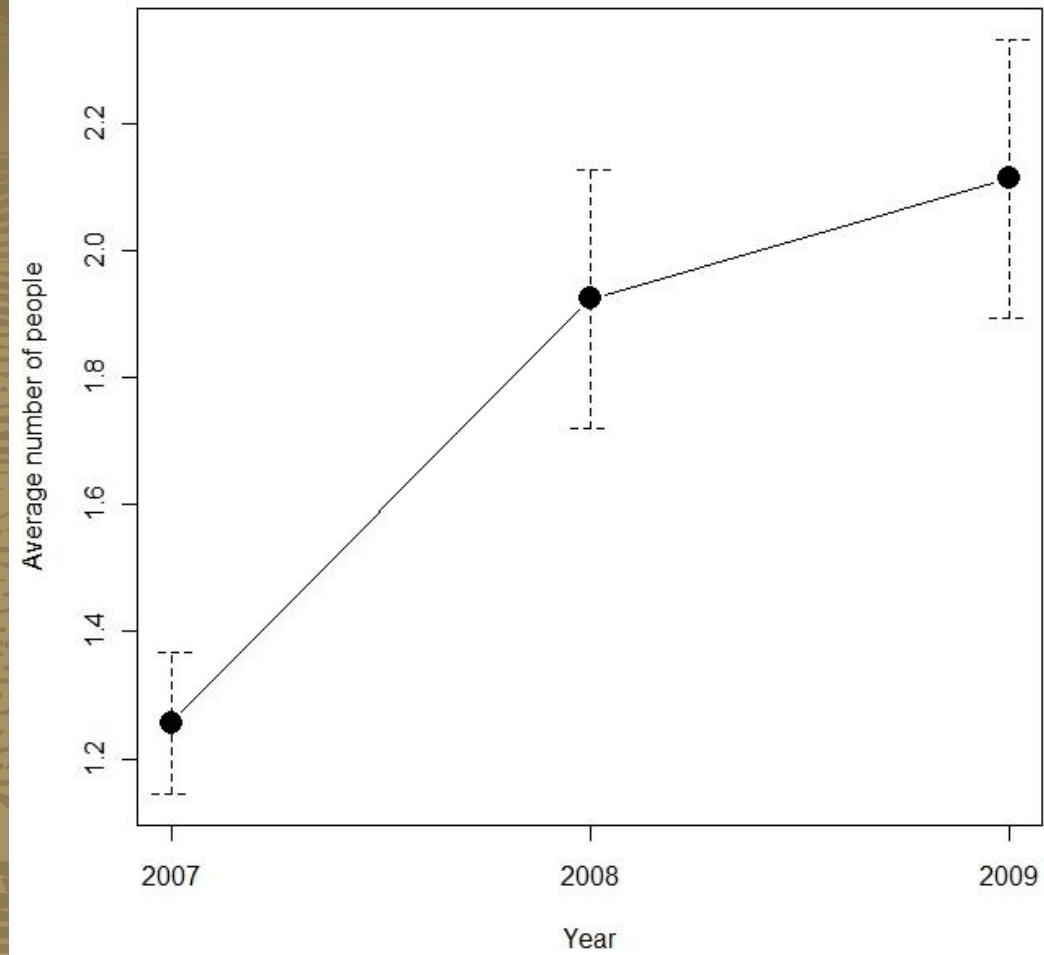
- Human use reflects time of high bear activity



- Mid-day use
- Day trips, camping restrictions, access



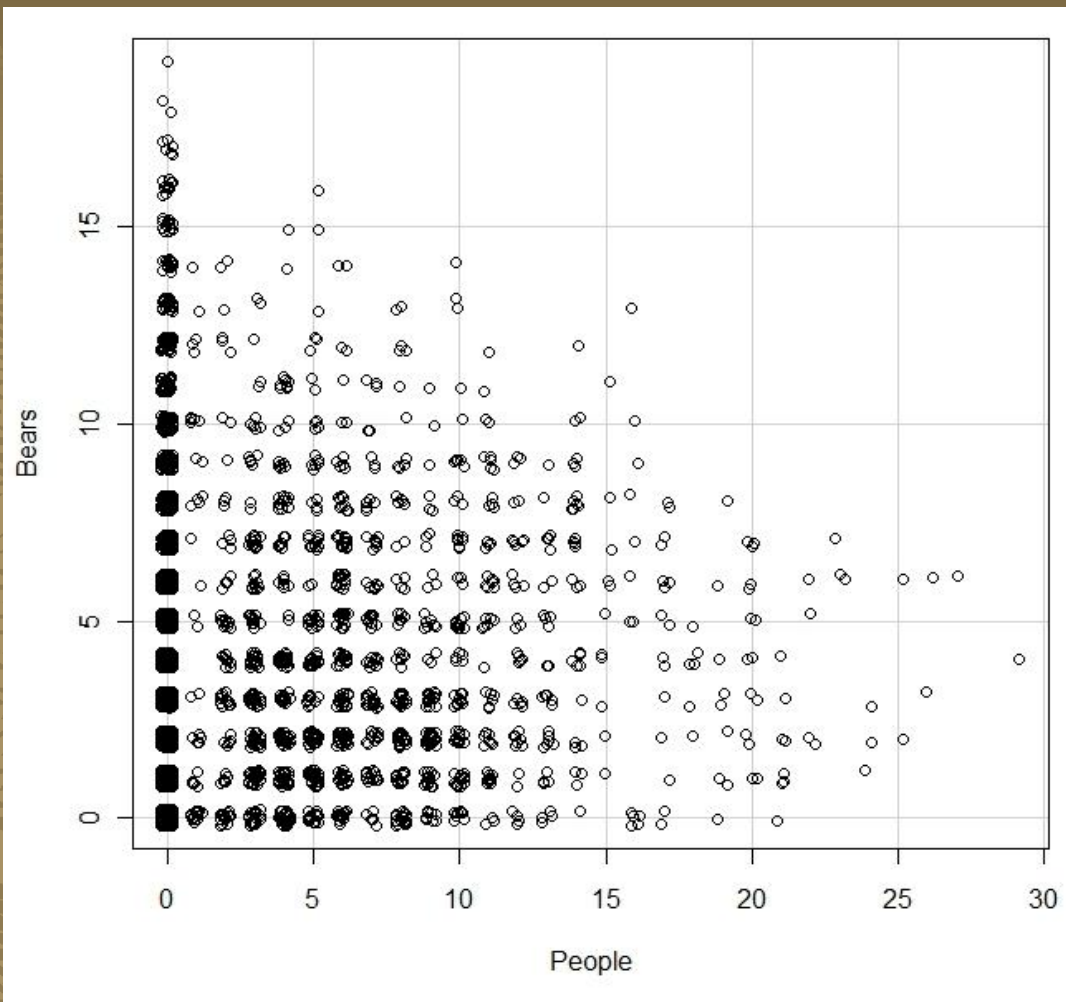
- Increase over years



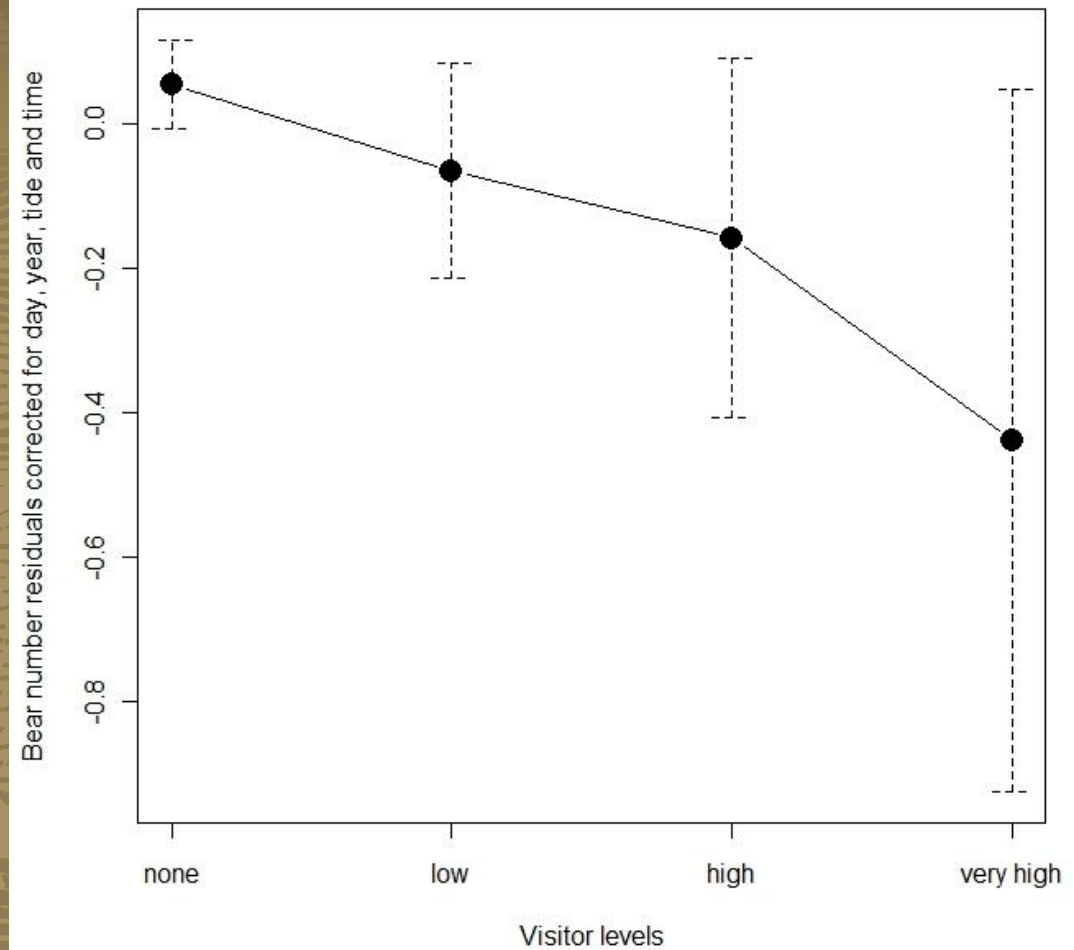
Results: bear use and visitation



- Visitors are present during bear activity
- Bear numbers decrease when there are high numbers of visitors



- Residual analysis used to correct for variations in year, tide, time and day of year



YCOORD

96.18

48.09

0.00

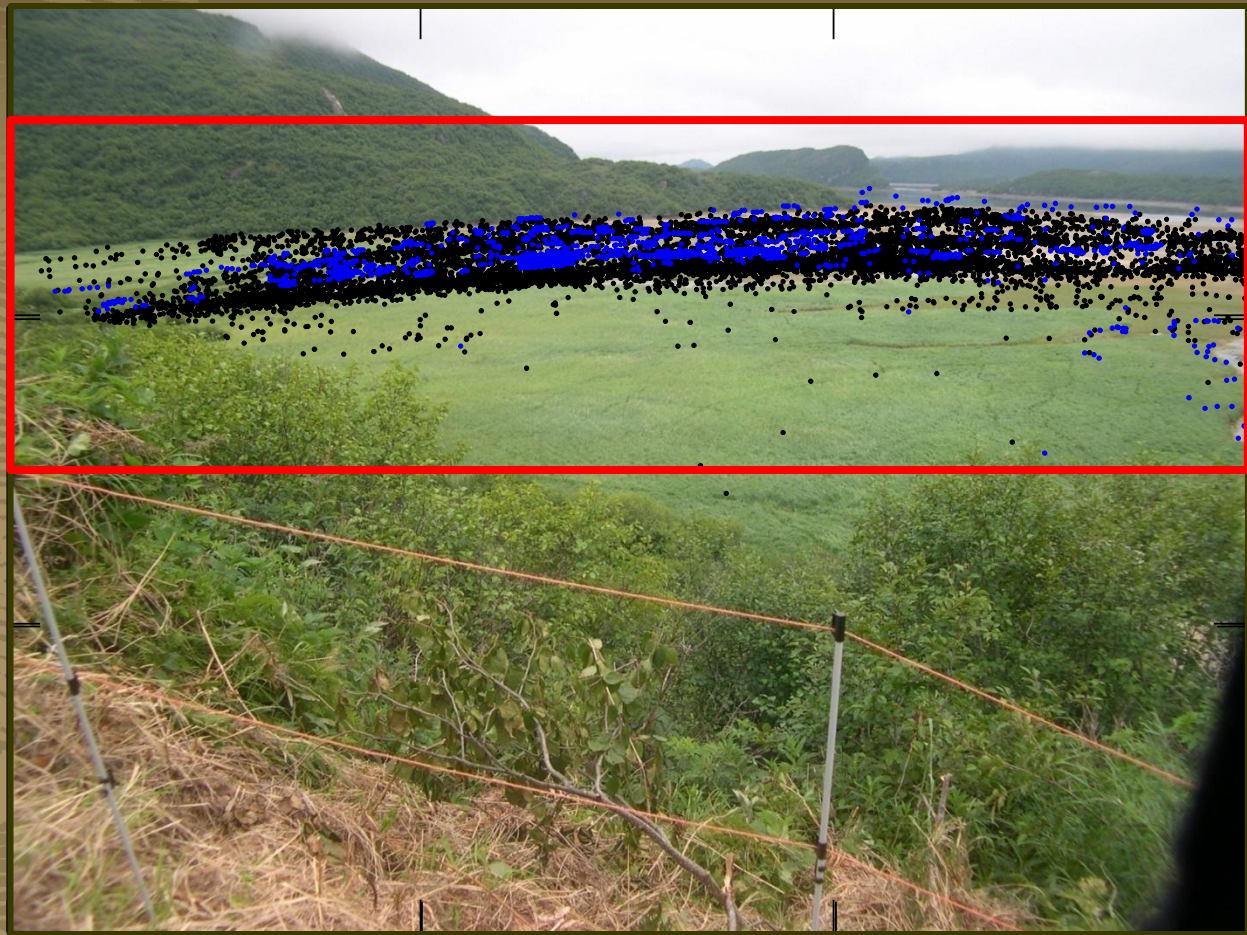
0.00

64.12

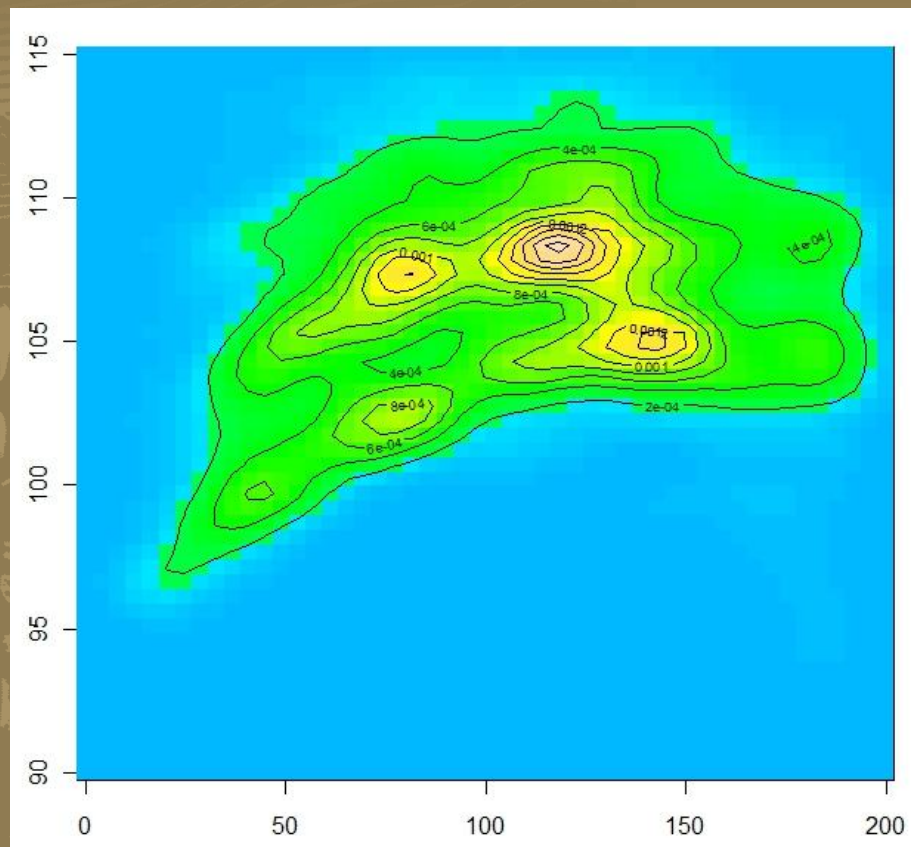
128.24

192.36

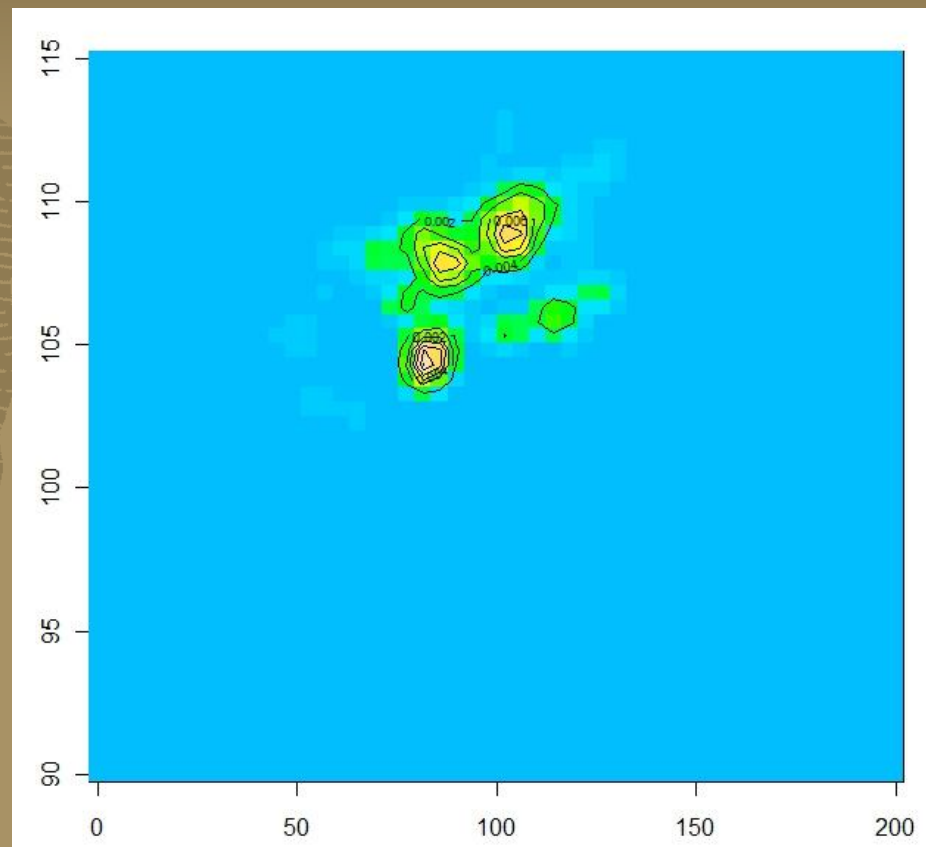
XCOORD



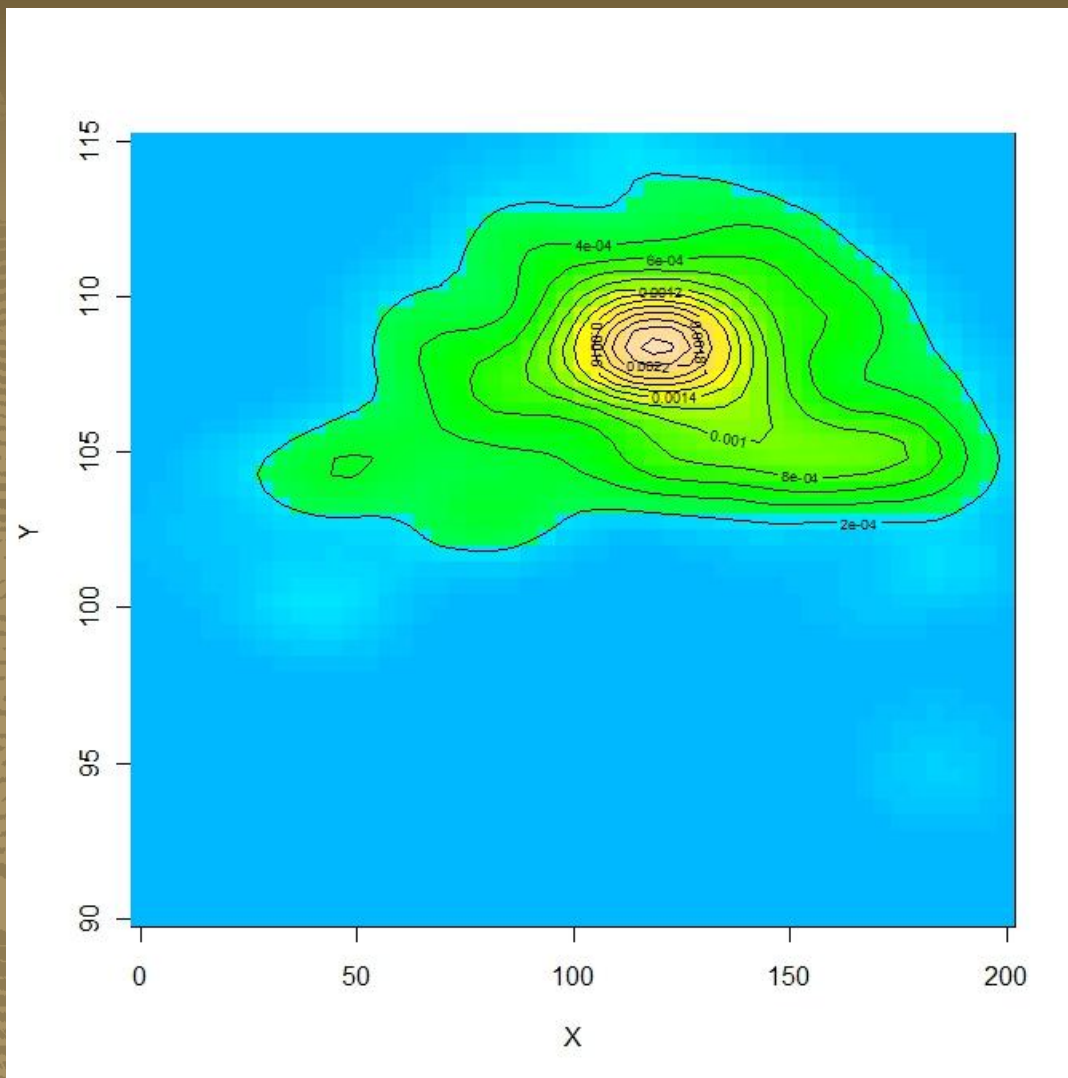
Bears



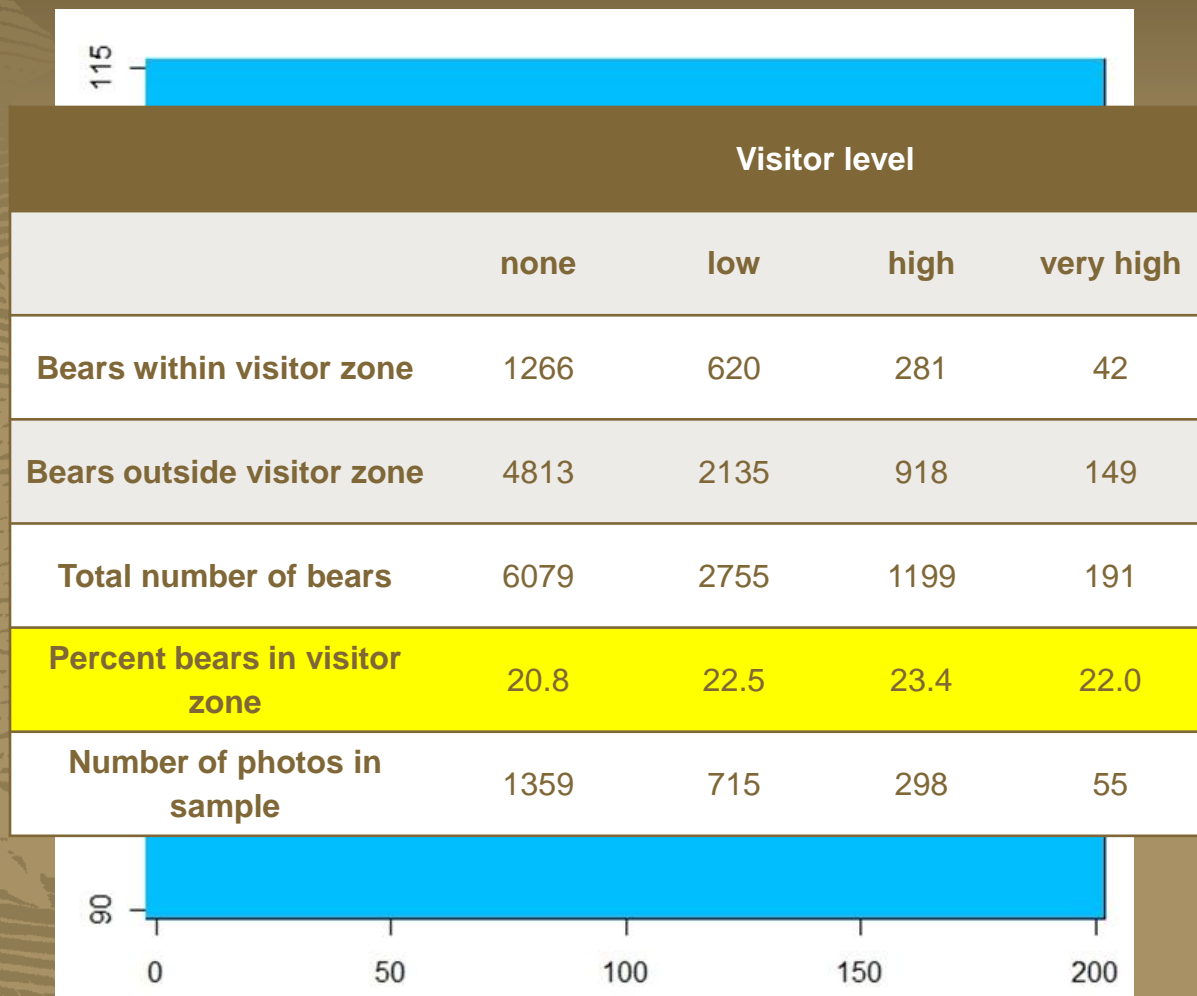
People



Neural Networks



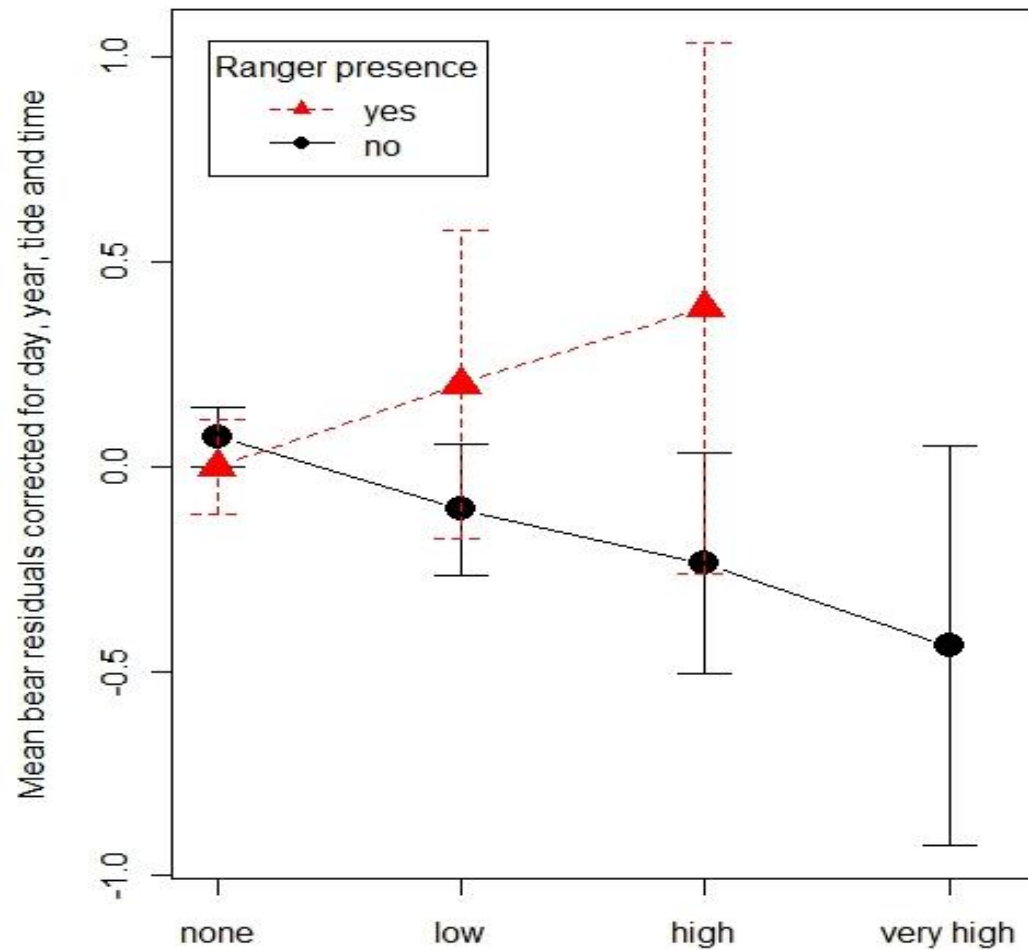
■ Bear use of the viewing area



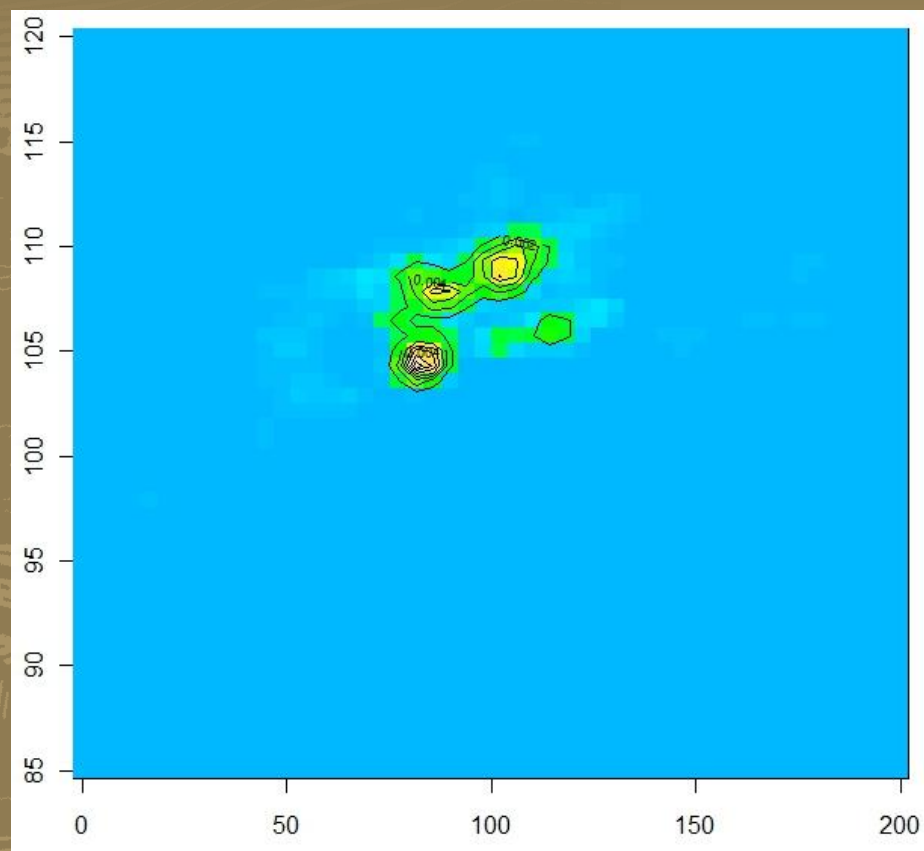
Results: management actions



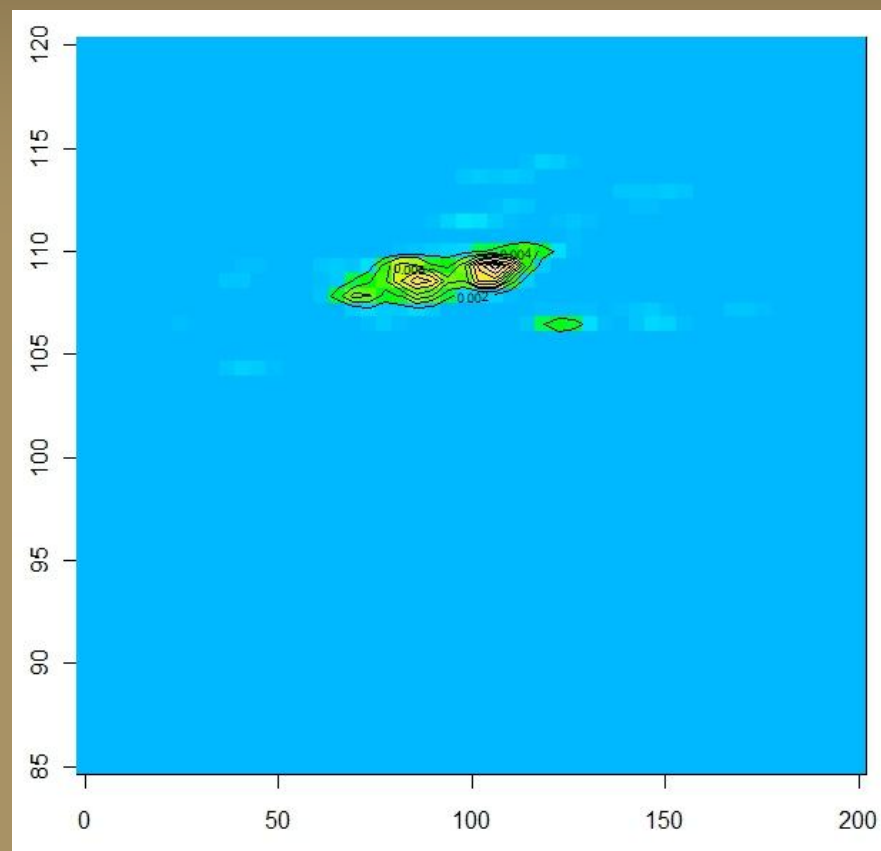
- Increase in mean bear numbers with ranger presence



No rangers



Rangers present



Conclusion





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carissa_n_turner@nps.gov

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